

Phrurolithus splendidus Song & Zheng 1992 (Araneae: Phrurolithidae), new to Japanese fauna

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Abstract — A phrurolithid spider species, *Phrurolithus splendidus* Song & Zheng 1992, is newly recorded from Japan. This species resembles *P. pennatus*, but can be distinguished from the latter by male tibial apophysis with thin finger-shaped apex, and spermathecae located behind openings.

Key words — Taxonomy, Yakushima Island, Ryukyu Islands

Introduction

Phrurolithus C. L. Koch 1839 is the type genus of the family Phrurolithidae, distributed North and Central America and Eurasia, in which seven species are known from Japan up to now (World Spider Catalog 2017). Recently, we recognized the occurrence of *P. splendidus* Song & Zheng 1992, which has been known from only China, from Japan after examining spider specimens collected in the comprehensive faunal surveys on Yakushima Island, Kagoshima Prefecture conducted during 2006 and 2008 (Yamauchi & Hisamatsu 2013; Yamauchi 2014; Osawa et al. 2017). Here, we report the first record of this species from Japan, and present morphological characteristics of male and female specimens.

All specimens used in this paper were collected by Malaise trap and collision trap, and detailed sampling method is described in Osawa et al. (2017). One male and one female of voucher specimens are deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo (NSMT).

The following abbreviations are used: ALE, anterior lateral eye; AME, anterior median eye; MOA, median ocular area; PLE, posterior lateral eye; PME, posterior median eye; RTA, retrolateral tibial apophysis.

Measurements are given in mm. Measurements of legs are given in the following format: [femur + patella + tibia + metatarsus + tarsus = total].

Phrurolithus splendidus Song & Zheng 1992
[Japanese name: Tairiku-yabane-urashimagumo]
(Figs. 1–6)

Phrurolithus pennatus: Tu & Zhu 1986, p. 93, figs. 24–28, ♂♀; Chen & Zhang 1991, p. 256, figs. 269, 1–5, ♂♀. [nec Yaginuma 1967, misidentification]

Phrurolithus splendidus Song & Zheng 1992, p. 103, figs. 1–9, ♂♀ [female holotype from China, not examined]; Song et al. 1999, p. 412, figs. 240C–D, 241 C–D, ♂♀; Zhu & Zhang 2011, p. 377, figs. 271A–G, ♂♀.

Specimens examined. All specimens were collected in Yakushima Is., Kagoshima Pref., by T. Yamauchi et al. The numbers in square brackets correspond to the occurrence ID of the specimen list in Osawa et al. (2017). Most individuals were obtained by Malaise traps, but only the adult female [313] was obtained by a collision trap. 1♂1♀, Aikodake Mt., 170m alt., 28-VI-2007–29-VII-2007 (1♂) [1699], 29-VII-2007–25-VIII-2007 (1♀) [1281]. 1♂1♀, Kankakedake Mt., 220m alt., 22-VII-2006–22-VIII-2006 (1♀, deposited in NSMT) [1216], 8-VI-2007–28-VI-2007 (1♂, deposited in NSMT) [2000]. 4♂2♀, Hanyama, 250m alt., 28-VI-2007–30-VII-2007 (2♂1♀) [1742, 1741], 8-VI-2007–28-VI-2007 (2♂) [1991, 2034], 19-VII-2006–22-VII-2006 (1♀) [313].

Diagnosis. This species resembles *P. pennatus* Yaginuma 1967, but can be distinguished from the latter by the following points: tibial apophysis of male palp with thin finger-shaped apex (Fig. 4), whereas gradually tapered in *P. pennatus*; spermathecae located behind openings (Fig. 6), whereas located beside openings.

Description. Based on 1♂ / 1♀. Body 3.55 / 4.78 long;



Figs. 1–2. *Phrurolithus splendidus* Song & Zheng 1992. 1, male habitus; 2, female habitus. Scales = 1.0 mm.

Table 1. Spination of legs of *Phrurolithus splendidus* Song & Zheng 1992 (dorsal / ventral; n = no spine, p = prolateral).

Leg		Femur	Patella	Tibia	Metatarsus
I	♂	1-1p-1p-1p-1,1p/n	n/n	n/2-2-2-2-2-2-2-2	n/1-2-2-2-2
	♀	1-1p-1p-1p-1,1p/n	n/n	n/2-2-2-2-2-2-2-2	n/2-2-2-2-2
II	♂	1/n	n/n	n/2-2-2-2-2-2-2	n/1-2-2-2-1
	♀	1/n	n/n	n/2-2-2-2-2-2-2-2	n/1-2-2-2-1
III	♂	1/n	n/n	n/n	n/n
	♀	1/n	n/n	n/n	n/n
IV	♂	1/n	n/n	n/n	n/n
	♀	1/n	n/n	n/n	n/n

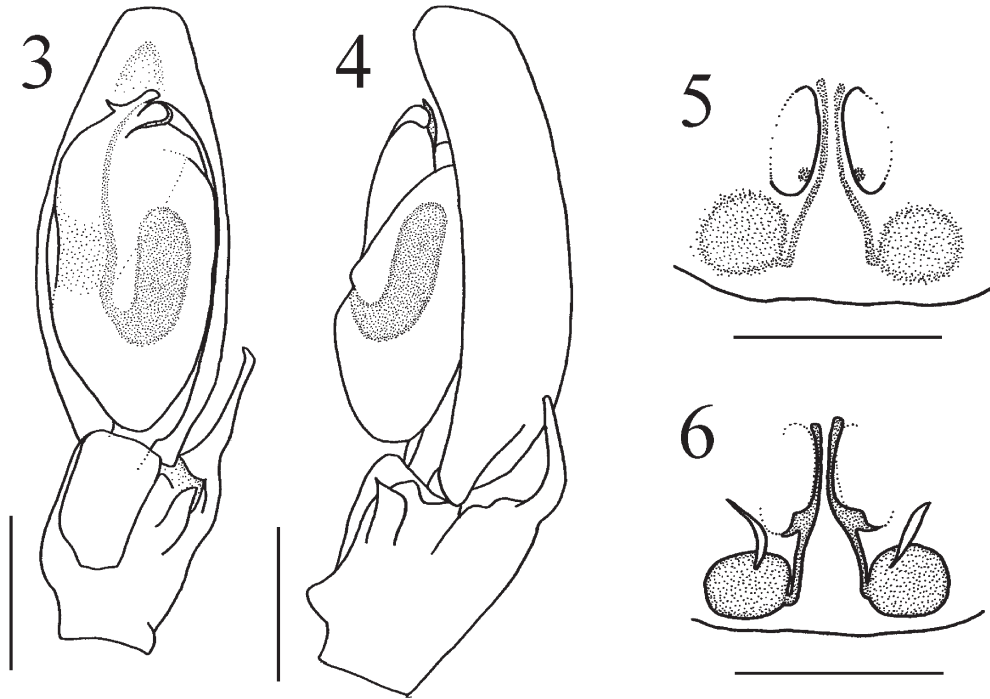
carapace 1.55 / 1.85 long; 1.28 / 1.53 wide; abdomen 2.00 / 2.93 long; 1.05 / 1.90 wide. Eye sizes: AME 0.08 / 0.12; ALE 0.08 / 0.12; PME 0.08 / 0.11; PLE 0.08 / 0.10. Distance between eyes: AME-AME 0.05 / 0.03; AME-ALE 0.02 / 0.02; PME-PME 0.07 / 0.07; PME-PLE 0.05 / 0.04; ALE-PLE 0.05 / 0.05. MOE 0.25 / 0.32 long, front width 0.22 / 0.27, behind width 0.23 / 0.28. Clypeus 0.12 / 0.12 high. Length of legs: I $1.75 + 0.58 + 1.88 + 1.68 + 1.18 = 7.05$ / $1.98 + 0.65 + 2.28 + 1.88 + 1.33 = 8.10$; II $1.45 + 0.53 + 1.40 + 1.30 + 0.98 = 5.65$ / $1.73 + 0.60 + 1.70 + 1.45 + 1.18 = 6.65$; III $1.30 + 0.48 + 1.08 + 1.28 + 0.78 = 4.90$ / $1.53 + 0.58 + 1.23 + 1.53 + 0.93 = 5.78$; IV $2.10 + 0.60 + 1.80 + 2.05 + 1.08 = 7.63$ / $2.43 + 0.70 + 2.08 + 2.50 + 1.30 = 9.00$.

Variation among specimens examined. Body 3.53–3.73 / 4.78–5.18 long; carapace 1.55–1.65 / 1.85–1.93 long; 1.20–1.35 / 1.53–1.60 wide; abdomen 1.98–2.08 / 2.88–3.25 long;

0.95–1.05 / 1.73–2.23 wide.

Chelicera with two spines on anterior side, bearing three promarginal and two retromarginal teeth. Abdomen with dorsal scutum covering almost whole abdomen in male (Fig. 1), covering about quarter in female (Fig. 2). Spination of legs as shown in Table 1. Male palp (Figs. 3–4): tegulum rather slender, with small projection on embolar base; tibia retrolaterally with small ventral apophysis and large dorsal apophysis having elongate apex. Female genitalia (Figs. 5–6): epigyne with longitudinal openings; spermatheca round and visible on epigynal surface.

Coloration and markings (Figs. 1–2). Male and female. Carapace mostly pale brown, covered with sparse pearly lustrous scale-like hairs. Eye field with sparse black setae and white hairs. Dorsum of abdomen brown, covered with sparse grey hairs, bearing pale brown and white haired part:



Figs. 3–6. *Phrurolithus splendidus* Song & Zheng 1992. 3–4, left male palp (3, ventral view; 4, retrolateral view); 5, epigyne, ventral view; 6, female internal genitalia, dorsal view. Scales = 0.2 mm.

three chevrons and apical spot. Spinnerets greyish brown. Venter of abdomen greyish brown, covered with grey hairs. Legs mostly brown except yellowish white and white haired tibial distal end.

Distribution. China, Japan (Yakushima Island).

Remarks. Adult males were collected from early June to late July and adult females were collected from late June to late August, so this species is considered to mature in the summer.

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